mali and *M. fasciatum* and by Farris (1965, Proc. Entomol. Soc. B.C., 62:30-33) for *M. scutellare.*

In November of 1970, live specimens of *M. dentiger* were removed from a *Quercus agrifola* Nee collected in the Castle Rock State Park, Santa Clara County. The host tree was leafless and appeared to have recently died. The gallery systems contained numerous adult beetles which appeared inactive in their brood niches. Upon microscopic study, these tunnels and niches appeared to lack active fungal growth and did not yield *A. brunnea* when isolations were attempted. Within dissected mycangia only a few thick wall fungal cells were observed. Only a single successful isolation of *A. brunnea* was obtained from dissected mycangia of eight female adult beetles. In July of 1971 beetles were recollected from dead *Q. agrifola* and *Q. lobata* Nee at the Castle Rock site and from *Q. agrifola* near Camp Saratoga, Santa Clara County. These galleries contained active monogamous pairs of adult beetles; eggs in small cradles in lateral walls of the tunnels; and larvae, pupae, and teneral adults developing within larval niches. The parental pair of beetles were continuing to lengthen the tunnels system in the host. A thin palisade of fungal growth lined the tunnels and larval niches. Larvae were actively feeding on this fungal layer. Seven isolations from larval niches all yielded cultures of *A. brunnea.* The fungus taken from the mycangia appeared to be rapidly budding. All eight isolations attempts yielded cultures of *A. brunnea.* Other observations of the biology of *M. dentiger* were similar to those made by Doane and Guilliland (Ibid.). The larger oak ambrosia beetle *M. scutellare* was also collected from these same host tress and also yielded *A. brunnea* from their tunnels and mycangia. — RICHARD A. ROEPER and JOHN R. J. FRENCH, *Departments of Botany and Entomology, Oregon State University, Corvallis, 97331.*

SCIENTIFIC NOTE

Cicada (*Diceroprocta apache* (Davis)) mortality by feeding on *Nerium oleander.* In mid-July 1977, there was a strong emergence of cicadas, *Diceroprocta apache,* in the vicinity of Tacna, Yuma County, southwestern Arizona. In this desert habitat the adult cicadas were feeding on the sap of many species of desert shrubs, including *Prosopis juliflora, Cercidium floridum, Cercidium microphyllum,* and *Acacia gregii.* It was commonplace to flush two to fifteen adult cicadas from a shrub of one of these species. In the grounds of a motel and several private gardens in Tacna, *Nerium oleander* had been planted as an ornamental tree. Cicadas were often observed feeding on the twigs of these trees. The plants ranged from 2 to 3 m in height and were of approximately the same size as native desert shrubs. Oleander is native to old world arid areas such as the Mediterranean. It is in the family Apocynaceae and it is widely reputed to be poisonous to livestock when fed upon. If the foliage is broken, it produces a bitter white latex. Characteristically, oleander bushes are very free from herbivore damage, no matter where they are planted. Under 10 separate oleander bushes in central Tacna, I counted 28, 12, 15, 17, 3, 22, 9, 7, 16, and 23 dead cicadas. Under one bush, I know that at least 6 died during the night as they fell on top of my car which had been parked underneath the bush. Both sexes were among the corpses. No dead cicadas were encountered under a total of 17 shrubs of other species, all of which had cicadas feeding on them in central Tacna. The dead cicadas were in various stages of decomposition, which suggests that they had died over a period of several days.

I interpret these observations to mean that oleander is a novel food plant in the habitat of these cicadas, a food plant with which they have not evolved the ability to avoid. In other words, there may well be plants which adult *D. apache* do not feed on in south-

western Arizona deserts, since they surely must have the ability to avoid poisonous food plants indigenous to their own habitat. However, the fact that they fed on oleander and were apparently killed by it suggests that their avoidance behavior is specific to the set of plants native to the habitat rather than some kind of generalized behavior which would allow them to recognize oleander as a poisonous plant. Judging from the miniscule proportion of oleander in the total biomass of plants fed on by the total cicada population, it seems extremely unlikely that these cicadas would ever evolve resistance to oleander, even if the relevant mutant were to appear.

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SCIENTIFIC NOTE

Population increase of introduced Elaterids, *Conoderus exsul* and *C. falli.* (Coleoptera: Elateridae).—Since its interception at Alameda, CA. in 1937 the sugarcane wireworm *Conoderus exsul* (Sharp) has currently been recorded from 14 counties in California. The southern potato wireworm, *Conoderus falli* Lane first intercepted in 1963 near Palm Springs has been reported from 4 counties. To learn more of the build-up of these elaterids records were kept of adults trapped at a 15 watt survey type fluorescent black light, located at Riverside and at Olive, CA. (Orange Co.), about 30 miles from Riverside. Adults were collected daily or on alternate days during the months May to November 1977. In the years 1974-76 inclusive the adults were collected between 9 and 10 p.m., from a suspended canvas at the top of which was placed a portable type black light of the same size and wattage as above.

Table 1 shows that the regulation survey type trap used in 1977 was either superior to the hand method of recovering adults, or was an indication of the tremendous build-up of both species in the 4 year period of these studies. At Olive in the years 1974-76 catches of *C. exsul* adults increased gradually, a trend to be expected, whereas at Riverside there was but slight difference in numbers of adults collected annually. The sizeable increase in numbers of *C. exsul* adults trapped at both locations in 1977 is an indication that this species has become well adapted climatically to this area.

The peak of *C. exsul* adult catches at both locations in 1977 occurred during July and August, a total of 30 and 37% were trapped at Riverside, respectively and 31 and 49% at Olive.

Table 1.—Yearly catches of *Conoderus exsul* and *falli* adults at black light. Riverside and Olive, CA. 1974-77.

	C. exsul		*C. falli*
	Riverside	Olive	Riverside
1974	286	518	436
1975	211	1238	440
1976	219	1564	401
1977	3106	3652	2289